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Abstract

This study investigated whether older female graduate students who have experienced an interruption in their formal academic education will display greater achievement motivation when competing against a male, than will younger graduate females or undergraduate females. The measure of achievement motivation was the percentage of incompleted tasks recalled minus the percentage of completed tasks recalled (Zeigarnik Effect). Previous research shows a high Zeigarnik score corresponding to a heightened achievement motive. When placed in a competitive situation with a male, older female graduate students showed significantly higher Zeigarnik scores than did the other groups in similar competition. Results were discussed with reference to a developing achievement oriented personal identity in the older Ss. An alternative social-acceptance explanation was also considered.

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Recently several workers in both psychology and education have focused their attention on the older female college graduate, her values, her capabilities, her goals and her motivations. Baruch (1967) using TAT-like cards to measure achievement reported that women out of college fifteen or more years have become more preoccupied in fantasy with achievement strivings than any other group tested. Similar findings are reported by Friedan (1963) whose investigation of 200 college classmates fifteen years after their graduation indicated the yearning of women at this stage for something more than children, husband and home. Mueller (1959) feels that during the middle and late years, without the pressures of a child-centered life, the drive for "self-realization" outside the home is felt most acutely by the educated woman. While employment is surely one important outlet for this urge, many of these older women decide to return to academia and

attend graduate school. To return to school midway through one's life and run the risk of failure in competition with younger students is an action which may be accompanied by an elevated achievement motive. For example, an individual who begins graduate work after being away from an academic environment for a long period of time, may be more motivated to achieve than an undergraduate or younger graduate student who is beginning her advanced work immediately after receiving her undergraduate degree. Such an individual may have more "invested" in success than her younger counterpart. This may be especially true of older women who have been able to free themselves from cultural prohibitions on achievement for women. Perhaps such women have inculcated a personal identity free of the more general cultural stereotypes for women. In fact, their achievement needs may be greater than for women who have not experienced a break in academic training.

The above hypothesis was one of several tested as part of a larger study on achievement motivation. Specifically, it is hypothesized that female graduate students who have experienced a substantial time interruption in their training will display significantly greater achievement motivation when competing against a male, than will younger graduate females or undergraduate females.

Method

Subjects

Ninety-five Ss were used in this study. They were divided into 5 groups of 19 each. Groups 1 and 2 consisted

of 19 males and 19 females respectively, enrolled in an undergraduate introductory psychology course at Kent State University. The mean chronological age of Ss in Group 1 was 19.2 years. The mean chronological age of Ss in Group 2 was 18.8 years. No member of either group was over 21 years of age. Participation in the study for these Ss was voluntary although each student earned experimental points for participating.

Groups 3 and 4 consisted of 19 males and 19 females respectively, enrolled as graduate students. The mean chronological age of Ss in Group 3 was 25.0 years. The mean chronological age of Ss in Group 4 was 24.9 years. No member of either group was over 30 years of age. Further, no member of Group 4 had experienced any more than a four year lapse between receiving her undergraduate degree and commencing graduate study. Indeed, for the entire Group 4, the mean time lapse was less than one year. Most of this group, eleven to be exact, continued immediately on from undergraduate to graduate work.

Because it was difficult to obtain Ss for Groups 3 and 4, more than one selection procedure was employed. The majority of Ss in these groups were randomly chosen from the graduate students listed in the University Student Directory and appointments were made over the telephone. Five of the Ss, however, were obtained when E asked for volunteers in two graduate education classes. The performance for these Ss was not significantly different from that of other Ss.

Group 5 consisted of 19 female graduate students currently enrolled in The University Plan for Graduate Women. This plan, sponsored by the Graduate School, encourages women with Bachelors Degrees to return to school for post-graduate work some years after they have received their undergraduate degree. Thus, Group 5 Ss have each had a break in their educational training of at least 5 years and were each at least 30 years old. The mean chronological age of the members of Group 5 was 40.6 years. The mean time between receiving their undergraduate degrees and beginning graduate training for members of this group was 15.8 years. These Ss were also randomly selected volunteers and were contacted by phone.

Finally, because there was no matched group of older male graduate students available, a 29 year old male "stooge," who appeared to be much older, was employed.

Procedure

Ss were taken into the experimental room in mixed sex pairs (i.e., undergraduate females and undergraduate males, graduate females and graduate males, older graduate females and the male stooge). After being introduced to each other, Ss were seated at the opposite ends of a table facing E. E sat midway between the two Ss. On one half of the trials a female sat to E's left, on the other half, a male. A partition had been positioned so that neither S could see what the other was writing. An interest scale relevant to a different hypothesis was administered to both Ss.

After both Ss had finished the scale the following instructions were read by E. They follow Weiner's (1966) instructions with minor modifications and were meant to create a competitive set in the Ss.

In this experiment we are assessing the effect that competition has on performance. You will be given a booklet of timed tasks to work, and for each task you successfully complete you will score some points. The points will be totalled at the completion of the booklet and the one with the most points will be the winner. Is that clear?

Here are the booklets. Please fill in the information on the top right of the page. These are timed tasks, so please don't turn the pages until instructed to do so. Now, there are 20 different tasks, and 75 seconds will be allowed for each one. I'll be keeping a tally of points as we go along, and at the end of each task I'll call time. When I call time, but not until I call time, raise your hand if you have successfully completed the task within the time limit. Please don't raise your hand until the end of the task when I call time, even if you should finish before the time is up. If you don't finish, just leave your hand down. Remember, you will be competing against each other. At the end

of the 20 tasks I'll total the scores to determine which one of you is the winner.

Now, turn to the first page and we'll read the instructions. Please don't turn to any other page just yet....(read)...any questions? Remember, once we have begun working, ask no questions. The tasks include rapid comprehension as well as rapid completion. Don't forget to raise your hand at the end of the time period if you complete the task. Ready--Begin.

At this point Ss began working on their "Zeigarnik Booklets." These booklets consist of 20 puzzle tasks. Every puzzle has two forms, long and short. It is unlikely that the long puzzles are completed within a brief time period, while the shorter ones are nearly always completed. The puzzles were adapted from Weiner (1966) with minor modifications in their difficulty. These random sequences of puzzles were selected so that each booklet contained ten tasks of the long form and ten of the short form. The tasks of the competing Ss were so arranged that on one-fourth of the tasks both Ss succeeded, on one-fourth of the tasks both Ss failed, and on one-half of the tasks one S succeeded while the other failed. Exactly seventy-five seconds were allowed for each task. At the end of the time period E would say "stop," note with his pencil which S had raised his hand signaling completion of the task, and then immediately say "Begin" to introduce the

next task. Directly after the twentieth task, a questionnaire relevant to a different hypothesis was administered to both Ss. Upon its completion by both Ss, the recall phase of the experiment was conducted and both Ss were told:

> Please push the sheets toward the center and turn them over. Now listen carefully. I want you to recall as many of the timed tasks that you did a few minutes ago as you can. Try to remember as many as you can and write them down on the large index card. I don't care how you describe them, but simply give me some indication of what the task involved. Please number each and print them legibly. Use both sides if necessary. Begin.

Two minutes were allowed for recall. At the end of the time period Ss were asked to "Stop. Write your name on the reverse side." E then checked each S's recall responses to make certain that he understood what task S meant to relate. Ss were then thanked, briefly told the true nature of the experiment, cautioned about discussing their experience with others, and dismissed.

Atkinson (1953) and Weiner (1966) have shown that individuals with high achievement motivation will remember from a series of tasks, more tasks which they are not allowed to complete than those they completed (Zeigarnik Effect). The opposite is true for those with low achievement motivation.

Therefore, utilizing the procedure outlined it was possible to measure the differential Zeigarnik (achievement motivation) scores of three female groups. If the older female graduate students produced significantly greater Zeigarnik scores than the other groups, our main experimental hypothesis would be confirmed.

Results

The measure of achievement motivation for each S in this study was the percentage of incompleted tasks recalled minus the percentage of completed tasks recalled (I% - C%). Percentages were used in order to adjust for individual differences in the number of tasks completed. Since percentage scores are nonlinear, each was converted into angles by the arc sin percentage transformation (Snedecor, 1946) before applying tests of significance. Means were obtained for the three female groups. The results are presented in Table 1.

Insert Table 1 about here

Specifically, a high positive score corresponds to an elevated Zeigarnik Effect (recall of more incompleted tasks); a high negative score corresponds to a suppressed Zeigarnik Effect (recall of more completed tasks). A striking feature of this data is the decided increase in the Zeigarnik Effect in older graduate women who have experienced a time break in their

academic training. Of the three means shown, only the mean for this group appears different.

Table 2 summarizes an analysis of the variance for the three female groups. The analysis of variance was significant ($p < .05$).

Insert Table 2 about here

In order to determine the significance of the differences between specific group means, a Newman-Keuls Sequential Range Test was performed (Winer, 1962). Separate comparisons between means for females resulted in significant differences between both the older graduate women and younger graduate women and the undergraduate women ($p < .05$). This would confirm our main experimental hypothesis. Graduate women who have experienced a substantial time interruption in their training possess a significantly greater achievement motive than younger graduate women or undergraduates, as measured by the Ziegarnik Effect.

Discussion

Baruch (1967) has indicated that the motivation of mature female college graduates may be a result "of arousal cues present in the environment as well as internal motivation"" (p. 266). She assumes that because college educated women are living more stimulating lives than less educated women, arousal cues will be present to raise the achievement motivation level. She suggests that these women may become dissatisfied

with the perceived limitations of women's role activities and become eager to resume their education which may lead to a new and interesting career. Perhaps feelings of boredom or not having enough formal education to actually do what they want to, among other things, may also heighten this desire to resume their education.

It seems apparent then, that there are a variety of pressures which may guide an older female college graduate back for more formal education and result in greater achievement strivings. These women may feel they must perform effectively to prove that they have made the correct decision and can function adequately in this new role. It is suggested that the stability of their achievement oriented personal identity may be enhanced if they succeed academically.

It is felt that undergraduate females and younger female graduate students do not share some of these perceptions with the older graduate women. Most of these younger students have, unlike the mature Ss, not yet taken on additional responsibilities such as husband, home, family, and career. It would seem, therefore, that although they might possess a fairly powerful achievement motive, these younger Ssmay not have as much invested in success. Education is still a continuing process for them (none of the younger graduate females had experienced a significant break in training of

more than four years and only three had been away for more than a year). They are not going through the process of returning to academia after a long absence. These women are, therefore, probably not as motivated to compete as the more mature women who may be more firmly committed to their decision to return, and who must continuously prove their capabilities to themselves and others.

E briefly and informally interviewed several of the older female Ss. Most indicated that they perceived themselves as "different" from and discriminated against by their fellow graduate students and teachers because of their age and sex. One may speculate that heightened achievement motivation and a desire to prove oneself in competition may be partly a function of these perceptions.

Another possibility presents itself in interpreting the results. Both Field (1951) and McClelland et. al. (1953) have observed that although manipulating achievement orientation by reference to intelligence and leadership may not increase achievement motivation scores in women (measured by TAT), experimental conditions which arouse a concern about social acceptance produced increases in their need for achievement scores.

It may be that our older graduate Ss, in addition to viewing the experimental situation as achievement arousing, saw it also as an experience which might gain them social

acceptance. Each had been called on the phone by E and told that her participation in the experiment had been suggested by the Coordinator of The University Plan for Graduate Women, a figure who was held in high esteem by these women. Further, each S in the older group was told that her cooperation was needed and would be greatly appreciated. Indeed, each was asked to choose a time which would be most convenient for her.

It is also possible that these Ss felt that by cooperating with E they might place The University Plan for Graduate Women in a more favorable light. Because the Plan represents these women to the rest of the university community, such cooperation may be indicative of a desire for social acceptance. It is felt that because the above perceptions were not shared by the younger graduate women and undergraduates, they did not view the experiment as referring to social acceptance.

It is clear, however, that the results reported to indicate that the older female graduate students demonstrated higher achievement motivation than any comparable group used in this study. These women are motivated to compete effectively with others and consequently are probably willing to pursue a serious course of study. The possible implications of these findings for educators seem clear. The relatively high achievement motivation of these older female graduate students

may be indicative of potentially more effective classroom performance. Indeed, they may be a better academic "risk" than younger female graduate students. Certainly, other comparative measurements of both the motivation and actual classroom performance of these two groups are indicated.

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Table 1

Mean Zeigarnik Effect Scores (I% - C%) After Arc Sin Transformation for Each of Three Groups

Groups	Mean Zeigarnik Effect Scores
(1) Undergraduate Females N = 19	.611
(2) Graduate Females N = 19	-1.242
(3) Older Graduate Females N = 19	9.602

Table 2

Analysis of Variance of the Zeigarnik Effect Magnitude for the Level of Education Variable for the Three Female Groups

Source	df	MS	f
Educational Level	2	836.340	4.280*
Error	54	195.425	
Total	56		

*p < .05

Footnotes

1. This article is based upon a thesis submitted by the first author in partial fulfillment of requirements for the M.A. degree at Kent State University. The second author was the immediate supervisor of the research. The authors gratefully acknowledge the assistance of Dr. Jeannette Reuter in the preparation of the original manuscript.

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